Faculty of Medicine
University of Toronto
Department of Biochemistry

File
Byron Lane

November 14th, 1984

Dear Dan,

It was most thoughtful of you to write as you did in your letter of November 7th. I appreciate it, including the kind offer to help by providing us with oligonucleotide probes. Of course, it is tempting to leap at such an offer, but I'd prefer to regard it as a 'security blanket' in the event that we are unhappy with the probes obtained from commercial contractors. It was good of you to suggest the possibility, and I shall no doubt sleep better in the knowledge that I have this blessed alternative if the need arises.

I agree with your comment about the unlikelihood of structural homology between proliferin and germin. A 26 kDa protein in peas, which appears under circumstances suspiciously similar to those under which germin emerges in cereals, seems to lack homology with germin at the level of cDNA hybridization. I can see from a re-reading of my September-letter that you may have thought I was pressing the idea of structural homology between proliferin and germin too far. Perhaps I was, but I am reminded that some intramolecular disulphide bonds, such as the α,α-disulphide bonds in the α-chains of Hp appear to be widely conserved in haptoglobins, for instance, but their non-essentiality in the overall function of the molecule is strongly suggested by the absence of α,α-disulphide bonds in dog Hp. When one works with cereals, as I do, it is easy to be impressed that structural features which seem to be so characteristic of the functional role of the molecule are in fact idiosyncratic, e.g. wheat-germ agglutinin, with all of its cysteine, is rather special in that a 'high cysteine' content is really quite uncommon, even among plant lectins.

All that I was really trying to imply in connection with my remarks in the September-letter is that function, at the level of structural domains, may be supported in quite different ways, by half-cysteine in disulphide bonding in one case, and by alternate forms of bonding in other cases. Probably the whole business was too banal to mention in the first place. Oh well.

As for the use of the lambda-gt11 expression vector, be assured we shall do whatever we can to bring this into our arsenal as soon as we are able to prepare ample amounts of germin for raising an antibody. Local success with the approach, in obtaining cDNA clones corresponding to the Na/K-ATPase and to the S100 brain protein has impressed me no end.

As ever, with warm good wishes,

Sincerely,

Byron Lane

Medical Sciences Building
Toronto, Ontario M5S 1A8
(416) 978-2700